

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (CURRENTLY AMENDED) ~~Seed of~~ A seed of soybean line soybean cultivar designated 0509246, wherein a representative sample of seed of said line ~~having been~~ was deposited under ATCC Accession No. ~~PTA-_____~~ No. PTA-7266.
2. (ORIGINAL) A soybean plant, or a part thereof, produced by growing the seed of claim 1.
3. (CURRENTLY AMENDED) A tissue culture of regenerable cells produced from the plant of claim 2.
4. (CURRENTLY AMENDED) ~~Protoplasts~~ A protoplast produced from the tissue culture of claim 3.
5. (CURRENTLY AMENDED) The tissue culture of cells of claim 3, wherein said cells of the tissue culture are produced from a tissue plant part selected from the group consisting of leaf, pollen, embryo, root, root tip, anther, pistil, cotyledon, hypocotyl, flower, seed, pod, and stem.
6. (CURRENTLY AMENDED) A soybean plant regenerated from the tissue culture of claim 3, ~~said plant having~~ wherein the regenerated plant has all the morphological and physiological characteristics of ~~line 0509246, soybean cultivar 0509246~~ and wherein a representative sample of seed of soybean cultivar 0509246 ~~representative seed of said line having been~~ was deposited under ATCC Accession No. ~~PTA-_____~~ No. PTA-7266.
7. (ORIGINAL) A method for producing an F1 hybrid soybean seed, comprising crossing the plant of claim 2 with a different soybean plant and harvesting the resultant F1 hybrid soybean seed.
- 8.-9. (CANCELED)

10. (CURRENTLY AMENDED) A method for producing a male sterile soybean plant comprising transforming the soybean plant of claim 2 with a nucleic acid molecule ~~that confers male sterility~~.

11. (ORIGINAL) A male sterile soybean plant produced by the method of claim 10.

12. (ORIGINAL) A method of producing an herbicide resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers herbicide resistance.

13. (ORIGINAL) An herbicide resistant soybean plant produced by the method of claim 12.

14. (CURRENTLY AMENDED) The soybean plant of claim 13, wherein the transgene confers resistance to an herbicide selected from the group ~~consisting of~~: consisting of imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.

15. (ORIGINAL) A method of producing an insect resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers insect resistance.

16. (ORIGINAL) An insect resistant soybean plant produced by the method of claim 15.

17. (ORIGINAL) The soybean plant of claim 16, wherein the transgene encodes a *Bacillus thuringiensis* endotoxin.

18. (ORIGINAL) A method of producing a disease resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers disease resistance.

19. (ORIGINAL) A disease resistant soybean plant produced by the method of claim 18.

20. (CURRENTLY AMENDED) A method of producing a soybean plant with modified fatty acid metabolism or modified carbohydrate metabolism comprising transforming the soybean plant of claim 2 with a transgene encoding a protein selected

from the group consisting of ~~stearyl-ACP desaturase~~, phytase, fructosyltransferase, levansucrase, alpha-amylase, ~~invertase and~~ invertase, and starch branching enzyme or encoding an anti-sense of stearyl-ACP desaturase.

21. (CURRENTLY AMENDED) A soybean plant having modified fatty acid metabolism or modified carbohydrate metabolism produced by the method of claim 20.

22. (CURRENTLY AMENDED) A soybean plant, or part thereof, having all the physiological and morphological characteristics of ~~the line~~ soybean cultivar 0509246, wherein a representative sample of seed of said line said cultivar having been deposited was deposited under ATCC Accession No. ~~PTA-_____~~ No. PTA-7266.

23. (CURRENTLY AMENDED) A method of introducing a desired trait into ~~soybean line~~ soybean cultivar 0509246 wherein the method comprising comprises:

- (a) crossing 0509246 plants grown from 0509246 seed, wherein a representative sample of seed of which has been deposited was deposited under ATCC Accession No. ~~PTA-_____~~ No. PTA-7266, with plants of another ~~soybean line~~ soybean cultivar that comprise a desired trait to produce ~~F1 progeny~~ progeny plants, wherein the desired trait is selected from the group consisting of male sterility, herbicide resistance, insect resistance, and disease resistance;
- (b) selecting ~~F1 progeny~~ one or more progeny plants that have the desired trait to produce selected ~~F1 progeny~~ progeny plants;
- (c) crossing the selected progeny plants with the 0509246 plants to produce backcross progeny plants;
- (d) selecting for backcross progeny plants that have the desired trait and physiological and morphological characteristics of ~~soybean line~~ soybean cultivar 0509246 listed in Table 1 to produce selected backcross progeny plants; and
- (e) repeating steps (c) and (d) ~~one or more~~ three or more times in succession to produce selected ~~second~~ fourth or higher backcross progeny plants that comprise the desired trait and all of the

physiological and morphological characteristics of ~~soybean line~~
soybean cultivar 0509246 listed in Table 1 as ~~determined at the 5%~~
~~significance level when grown in the same environmental conditions.~~

24. (CURRENTLY AMENDED) A plant produced by the method of claim 23, wherein the plant has the desired trait and all of the physiological and morphological characteristics of ~~soybean line~~ soybean cultivar 0509246 listed in Table 1 as ~~determined at the 5% significance level when grown in the same environmental conditions.~~

25. (CURRENTLY AMENDED) The plant of ~~claim 24~~ claim 24, wherein the desired trait is herbicide resistance and the resistance is conferred to an herbicide selected from the group ~~consisting of~~: consisting of imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and bezonitrile.

26. (CURRENTLY AMENDED) The plant of ~~claim 24~~ claim 24, wherein the desired trait is insect resistance and the insect resistance is conferred by a transgene encoding a *Bacillus thuringiensis* endotoxin.

27. (CURRENTLY AMENDED) The plant of ~~claim 24~~ claim 24, wherein the desired trait is male sterility and the trait is conferred by a ~~cytoplasmic~~ nucleic acid molecule ~~that confers male sterility.~~

28. (CURRENTLY AMENDED) A method of modifying fatty acid metabolism or ~~modified~~ modifying carbohydrate metabolism ~~into~~ metabolism of ~~soybean line~~
soybean cultivar 0509246 ~~comprising wherein the method comprises:~~

- (a) crossing 0509246 plants grown from 0509246 seed, wherein a
representative sample of seed of which has been deposited was
deposited under ATCC Accession No. PTA-_____ No. PTA-
7266, with plants of another ~~soybean line~~ soybean cultivar that
comprise a nucleic acid molecule encoding an enzyme selected
from the group consisting of phytase, ~~stearyl-ACP desaturase~~,
fructosyltransferase, levansucrase, alpha-amylase, ~~invertase and~~

invertase, and starch branching enzyme or encoding an antisense of stearyl-ACP desaturase;

- (b) selecting ~~F1 progeny~~ one or more progeny plants that have said nucleic acid molecule to produce selected ~~F1 progeny~~ progeny plants;
- (c) crossing the selected progeny plants with the 0509246 plants to produce backcross progeny plants;
- (d) selecting for backcross progeny plants that have said nucleic acid molecule and have all of the physiological and morphological characteristics of ~~soybean line~~ soybean cultivar 0509246 listed in Table 1 to produce selected backcross progeny plants; and
- (e) repeating steps (c) and (d) ~~one or more~~ three or more times in succession to produce selected ~~second~~ fourth or higher backcross progeny plants that comprise said nucleic acid molecule and have all of the physiological and morphological characteristics of ~~soybean line~~ soybean cultivar 0509246 listed in Table 1 ~~as determined at the 5% significance level when grown in the same environmental conditions.~~

29. (CURRENTLY AMENDED) A soybean plant produced by the method of claim 28, wherein the plant comprises the nucleic acid molecule and has all of the physiological and morphological characteristics of ~~soybean line~~ soybean cultivar 0509246 listed in Table 1 ~~as determined at the 5% significance level when grown in the same environmental conditions.~~

30. (NEW) Pollen of the plant of claim 2.

31. (NEW) An ovule of the plant of claim 2.